

ABSTRACT OF THE DISCLOSURE

A plasma reactor electrode, a method of making it, and a plasma reaction chamber employing the inventive electrode, wherein the electrode is configured to provide superior thermal conductivity characteristics. In the inventive electrode, first and second plates are connected by pins. In one embodiment, the pins, and the first and second plates are made of the same material, such as aluminum. The connection of the pins through the first and second plates provides superior thermal conductivity between the first and second plates. A dielectric cover, which may be made of ceramic or quartz, may be added below the lower plate. To form a showerhead assembly, holes are formed in the lower plate, and also in the dielectric cover, in alignment with a plenum chamber, to provide appropriate inlet for process gas into the chamber.